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POLICE VILLAGE OF CLARKSBURG
1966
COUNTY OF GREY

THE
ONTARIO WATER RESOURCES
COMMISSION
WATER POLLUTION SURVEY
of the
POLICE VILLAGE OF CLARKSBURG
COUNTY OF GREY

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1966
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1966

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Report on a water pollution
survey of the police village of
Clarksburg, county of Grey.

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Report

on a

Water Pollution Survey

of the

POLICE VILLAGE OF CLARKSBURG

County of Grey

December 1966

Division of Sanitary Engineering

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ONTARIO WATER RESOURCES COMMISSION

R E P O R T

INTRODUCTION

A brief water pollution survey was made in the Police Village of Clarksburg on July 11, 1966. Municipal officials had requested the Commission to investigate the provision of a provincially-owned sewage works project for the village, and this prompted the carrying out of a water pollution survey. The survey was made to determine if sewage works were warranted by assessing the degree of water pollution existing in the police village. Surveys of this nature are also performed routinely by the OWRC, and where pollution sources are noted, recommendations concerning their abatement are made to the parties concerned.

On July 11, 1966, surface-water samples were collected from watercourses within the municipality and any evident discharges thereto. In addition, the results of a number of routine samples which have been collected from the Beaver River during the past are included in the report. The appendices to the report include a tabulation of the sample results, an interpretation of the laboratory tests, and a map of the police village showing the sampling point locations.

GENERAL INFORMATION

The Police Village of Clarksburg is located just south of the Town of Thornbury. Private water and sewage disposal systems are

utilized. The Beaver River flows through the village and continues northward for about one mile to its mouth at Georgian Bay. Upstream from Clarksburg, the river is directed to a flume which flows through the local feed mill and then discharges to a tailrace. The tailrace crosses the main intersection and then veers northward directly behind the buildings on the east side of the main street to rejoin the Beaver River downstream from the village.

EXISTING AND POTENTIAL POLLUTION SOURCES

(a) Private Sewage Disposal

According to local officials, a sewage disposal problem exists in the business section of the community where lack of space precludes the installation of adequate septic tank and tile field systems. It is believed that about one-half of the twenty or so business establishments discharge sanitary wastes directly to the tailrace via submerged outfalls.

(b) Municipal Storm Sewers

A small network of storm sewers discharging to the Beaver River and the aforementioned tailrace serve the community. On July 11, 1966, the storm sewers were dry with the exception of one. The storm sewer outfall designated on the appended map as BC-1.5-W was sampled and the results were found to be considerably in excess of OWRC objectives for discharge to a watercourse. This indicates the presence of sanitary waste in the discharge.

(c) Industrial

The P. Haines and Son Apple Evaporator plant is located on Clark Street. Dried apples are produced at this plant. In the past there has been a problem with apple cores and peelings gaining access to the watercourse near the plant; however, it is reported that this type of waste material is now hauled away for land disposal.

The Meaford Creamery Limited located on Clark Street serves as a milk receiving station. Wastes emanating from this plant are disposed by means of a septic tank and tile bed system.

DISCUSSION OF LABORATORY RESULTS

The results of the samples collected from the Beaver River and the tailrace are within the objectives for surface waters. These results indicate that the pollution sources within the community were not having a marked influence on the quality of the watercourse at this time.

SEWAGE WORKS SYSTEM

It is the feeling of local officials that initially a sewage works system would serve the business section only. This would permit the connection of the existing sanitary facilities to the sewer and allow facilities to be installed in other premises where such are required.

As a result of this survey, it can be seen that a sewage works system to serve the community could be of benefit; however, it

would appear that the cost of constructing such a system to serve only a small number of premises would prohibit the undertaking of such a project.

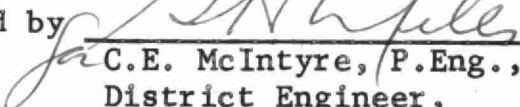
SUMMARY

The existing water pollution sources within the Police Village of Clarksburg as determined by this survey are the discharge from a storm sewer located at Clark and Marsh streets, and a small number of sanitary waste facilities which reportedly drain directly to the tailrace flowing to the Beaver River. Municipal officials have been considering the establishment of a municipal sewage works system. The cost of such a system would appear to be prohibitive.

RECOMMENDATIONS

Private measures such as the establishment of a communal septic tank and tile bed system to correct the sewage disposal problems in the business section should be investigated.

/elc
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EXPLANATION AND SIGNIFICANCE OF LABORATORY ANALYSES

A Bacteriological Examination

Bacteriological examinations were performed on samples from the watercourse. The Membrane Filter technique was used to obtain a direct enumeration of coliform organisms. These organisms are normal inhabitants of the intestines of man and other warm blooded animals. They are always present in sewage and are generally minimal in other pollutants. The results of the examinations are reported as M.F. Coliform count per 100 ml.

The Commission's objective for surface waters in Ontario is a coliform count of not greater than 2,400 organisms per 100 ml.

B Chemical Analysis

The chemical analysis performed on stream and outfall samples included determinations for biochemical oxygen demand and suspended solids.

(1) Biochemical Oxygen Demand (BOD)

Biochemical oxygen demand is reported in parts per million (ppm) and is an indication of the amount of oxygen required for stabilization of decomposable organic matter present in sewage, polluted waters or industrial wastes. The completion of the test requires five days, under the controlled incubation temperature of 20° C.

The Commission's water quality objectives are (i) for stream water - a 5-Day BOD of not greater than 4 ppm. (ii) for

storm sewer, water pollution control plant and industrial waste discharges - a 5-Day BOD of not greater than 15 ppm.

(2) Solids

The laboratory does tests to determine the total and suspended solids in a sample. The value for dissolved solids is determined by taking the mathematical difference between the total and suspended solids.

The concentration of suspended solids expressed in parts per million (ppm) is generally the most significant of the solids analyses in regard to stream water and outfall discharge qualities.

The OWRC's objective for discharge is a suspended solids of not greater than 15 ppm.

POLICE VILLAGE OF CLARKSBURG

WATER POLLUTION SURVEY

SAMPLE RESULTS

TABLE I

<u>Sampling Point No.</u>	<u>Description</u>	<u>Date</u>	<u>5-Day BOD (ppm)</u>	<u>Total (ppm)</u>	<u>Solids Susp. (ppm)</u>	<u>Diss. (ppm)</u>	<u>M.F. Coliform Count/100 ML</u>
B-1.0	Beaver River just downstream from junction with tailrace.	July 11/66	1.1	280	18	262	250
B-1.5	Beaver River at Clarksburg-Thornbury Road.	Nov. 6/63	1.9	286	5	281	126
		Sept. 20/60	1.1	246	1	245	870
		July 11/66	1.1	270	5	265	110
B-1.5-W (E)	Storm sewer outfall to Beaver R. at Clarksburg-Thornbury Road-northeast corner.	July 11/66	No Flow				
B-1.5-W (W)	Storm sewer outfall to Beaver R. Thornbury-Clarksburg Road-northwest corner.	July 11/66	No Flow				
BC-1.3	Tailrace at the foot of George St.	July 11/66	0.8	186	27	159	170

TABLE I CONT'D

<u>Sampling Point No.</u>	<u>Description</u>	<u>Date</u>	<u>5-Day BOD (ppm)</u>	<u>Total (ppm)</u>	<u>Solids Susp. (ppm)</u>	<u>Diss. (ppm)</u>	<u>M.F. Coliform Count/100 ML</u>
BC-1.3 (W)	Storm sewer outfall to tailrace at the foot of George Street.	July 11/66	Outfall not located - No flow in sewer				
BC-1.5	Tailrace Clarksburg Creek at Clarksburg Thornbury Road.	Nov. 6/63	1.8	278	5	271	120
		Sept. 20/65	0.6	246	1	245	280
		July 11/66	0.6	294	32	262	180
BC-1.5-W (SE)	Storm sewer outfall to tailrace-Clark and Marsh sts.-north-east corner.	July 11/66	No Flow				
BC-1.5W	Storm sewer outfall to tailrace at Clark and Marsh sts. south-west side.	July 11/66	99	540	86	454	90,000,000
B-2.1	Beaver River at road below dam-upstream from Clarksburg.	Nov. 6/63	2.2	284	7	277	96
		Sept. 20/65	0.7	248	1	247	350
		July 11/66	1.0	244	10	234	130

TOWN OF THORNBURY



LEGEND

- BC-1-5 - STREAM SAMPLING POINT SHOWING MILEAGE
- BC-1-3 - OUTFALL SHOWING STREAM AND MILEAGE
- W - TYPE OF OUTFALL
- W - STORM SEWER

LOT 29

LOT 28

ONTARIO WATER RESOURCES COMMISSION
POLICE VILLAGE OF CLARKSBURG
WATER POLLUTION SURVEY
1966

SCALE: 400 200 0 400 FEET

DRAWN BY: L.L. BROOME DATE: JANUARY, 1967

CHECKED BY: M.H. DRAWING No: 67-4